North Pole Refinery Technical Project Team
September 14, 2010
Summary Comments

Technical Project Team Members

Bill Butler	City of North Pole, Director of City Services
Cindy Christian	DEC Drinking Water Program, Compliance Program Manager
Mark Coggeshall	Flint Hills Resources, Project Manager
Dennis Elliott	Williams, Director of Environment, Health and Safety
Ann Farris	DEC Contaminated Sites Program, Project Manager
Brian Jackson	DEC Prevention and Emergency Response Program (PERP)
Lee Johnson	DEC, Drinking Water Program, Environmental Engineer
Cassie Kirk	DH&SS, Div. of Epidemiology, Toxicologist
Elizabeth Page	Reiss Remediation
Jeanne Swartz	DEC, Industry Preparedness Program (IPP)
Lori Verbrugge	DH&SS, Div. of Epidemiology, Toxicologist

Support Personnel

Rebecca Andresen	Arcadis (via telecon) - Site Characterization Discussion
Brian Angerman	Barr Engineering (via telecon) - IRAP Discussion
Earl Crapps	DEC, Contaminated Sites Program, Program Specialist (via telecon)
Denise Elston	DEC, Contaminated Sites Program, Program Specialist
Susan Erben	DEC Contaminated Sites Program, Community Involvement Specialist
JoAnn Grady	Grady and Associates, Team Facilitator
Nim Ha	DH&SS Health Educator (via telecon)
Lisa Minnear	OASIS Environmental, Project Manager
Meg Michell	Environmental Standards, Inc. (via telecon)
David Verbrugge	DH&SS, Div. of Epidemiology, Chemist (via telecon)
Rock Vitale	Environmental Standards, Inc. (via telecon)
Shannon and Wilson	(via telecon) - Site Characterization Discussion
Eric Zentner	OASIS Environmental, Asst. Facilitator

INTRODUCTIONS AND DISCUSSION OF MEETING AGENDA

The meeting began at 9:00 AM as team members introduced themselves and briefly discussed and approved the team's agenda for the meeting. Dr. Verbrugge introduced Cassie Kirk who will be her replacement on the team. Dr. Verbrugge informed the team that Ms. Ha will become DHSS's acting program manager for the project and assume most of her administrative responsibilities while Ms. Kirk will assume her role as a technical consultant.

REVIEW OF ACTION ITEMS FROM THE JULY 14TH MEETING

The team reviewed the completion status of action items from the previous TPT meeting. The team determined that most of the action items had been completed. In regard to Action Item 1, Mr.

Coggeshall said that FHR was preparing a Lab Area Groundwater Screening Investigation Sampling and Analysis Plan for ADEC review. In regard to Action Item 3, Ms. Farris remarked that she had received the database and tool and she would provide both to Oasis as soon as it was practicable.
Ms. Page stated that she is trying to structure her copy of the database program to mirror that being provided to ADEC to facilitate answering any questions ADEC may have on the database.

The team discussed the action item regarding looking into a permanent display of technical information at the local North Pole mall. Mr. Coggeshall informed the team that FHR decided that it would rather not establish a permanent display for project information since it would be difficult to provide the appropriate context for information presented and it would be difficult to update.

STATUS OF THE EPA'S PRELIMINARY ASSESSMENT AND HAZARD RANKING

Mr. Whittier, with EPA, has told Ms. Grady that he or a colleague will attend or call in to the November 3rd TPT meeting to present information on the EPA's preliminary assessment and NPL scoring.

DR. VERBRUGGE'S DEPARTURE FROM DHSS

Dr. Verbrugge's last day with DHSS is October 8th. She said that coordination with Jim Durant of ATSDR regarding the toxicity evaluation of sulfolane should go through Cassie Kirk with DHSS.

Dr. Verbrugge briefly described a conference call in which ASTDR's Minimum Risk Level (MRL) group agreed to review the public health action level derived for sulfolane by Mr. Durant. She said that the group made a thorough review of the sulfolane literature, analyzed Mr. Durant's ATSDR Health Consultation from February 2010, the two reports from ToxStrategies, and discussed the most scientifically defensible action level given the sulfolane data available. They decided that the NOEAL approach was more appropriate than the Benchmark Dose modeling approach advocated by ToxStrategies, and that the Xu study was more appropriate to use than the Huntington Life Sciences study for derivation of the action level. The details of the workgroup's derivation of the action level varied somewhat from Mr. Durant's Health Consultation, but the overall Tolerable Daily Intake for sulfolane did not change, nor did ATSDR's public health action level for sulfolane. ATSDR's Mr. Durant is preparing a new Health Consultation to summarize the recommendations of the MRL workgroup, which should be available in December 2010.

ACTION ITEM: *Dr. Verbrugge will provide Jim Durant's (ATSDR) contact information to the team.*

THE RISK COMMUNICATION SUBGROUP UPDATE

The team discussed various preparations for the upcoming Open House meeting. Ms. Erben mentioned that the advertisement for the Open House meeting would be published in the News Miner on the following Friday and Saturday, and in the Latitude on the following Tuesday. She said that ADEC recently published an overview of the project, which can be distributed at the upcoming meeting. DEC will also have poster board presentations showing the state's cleanup process, a general project schedule, an

overview of the TPT, and an explanation of the risk assessment process. Ms. Page mentioned that FHR has prepared posters at ADEC's request showing the plume area and information about trends in onsite and offsite wells as wells as a poster of figure 5 from the IRAP showing the expanded remediation system and the capture zone. Ms. Ha remarked that the DHSS presentation would mostly be devoted to the Garden Study's sampling results and perhaps the Greenhouse Study. She added that DHSS will have to revise its message points based on the results as soon as they receive final, validated data. To date, the second round of data has not been validated.

The team considered whether to present information on the design specifications of the new municipal well at the Open House meeting. The team agreed that it would be appropriate to present information on the well's construction status and its life expectancy and location. The team discussed bringing ADEC's physical groundwater model to the Open House meeting and providing an interpreter to explain it to Open House attendees. Ms Farris said ADEC would provide the physical model and an interpreter if someone from the department is available.

Ms. Ha related concerns voiced by residents over the increase in the sulfolane concentrations in their well from the first round of water sampling from their tap to the second round of water sampling from their garden house. Ms. Ha told residents they would be kept informed, but she added that the residents seem more concerned about the water than the vegetable data.

The team discussed the reasons for the difference in the water concentrations. Mr. Coggeshall informed the team that the initial groundwater sampling efforts at private wells and the Garden Study water sampling events were processed by different labs and the differences in results may be attributed to their use of different quantitative techniques in addition to the fact the samples were collected from different locations and at different points in time. He explained that SGS conducted the initial water analysis of private wells using EPA Method 8270 and quantitation of sulfolane was by an internal standards technique whereas Pace Labs conducted the Garden Study water analysis using EPA method 8270 with quantitation by an isotope dilution technique.

The team agreed that this was likely the reason for the concentration differences and it was not due to an actual increase of sulfolane in the water well or in the groundwater aquifer, although this must be further documented and proven by the laboratories. The team agreed to take up discussion of the issue at the next toxicology subgroup meeting, but for now this information regarding lab differences could be discussed with the participants of the Garden Study and any concerned citizens at the Open House.

Ms. Farris briefly described recent legislative briefings held on the project. She said that Representative Tammy Wilson expressed her view that DEC has not done an adequate job overseeing the facility and that the cleanup process is taking too long. Representative Wilson stated that she feels that there should be more regulation of the facility. Ms Farris remarked that the additional funding and resources required for increased regulation could only be obtained through coordination with ADEC's commissioner and Representative Wilson should meet with the ADEC's commissioner to discuss the subject sometime in the near future.

TOXICOLOGY SUB GROUP

Mr. Earl Crapps, Environmental Program Specialist with DEC, Ms. Rebecca Andresen with Arcadis, and Dave Verbrugge, Chief Chemist with the Alaska State Public Health Laboratory, joined the meeting via telecom.

The team took up discussion of the results of the Garden Study. The team agreed that the results must be validated in time for the upcoming Open House meeting or they should not be presented. The team reviewed recent data from the Garden Study that indicated high concentration of sulfolane in cauliflower. This was not expected because broccoli and other similar vegetables did not have as high a concentration. Also the literature research does not support this update. The team discussed the possibility of chemical interferences during the sample analysis that could cause an incorrect result.

Mr. Vitale explained that the project laboratories uses a mass spectrometer to determine whether sulfolane is present in a given subject material. The presence of sulfolane is determined by a specific mass ion signature and in the case of sulfolane; the mass ion used for quantitation is m/z 120. Unfortunately, there are many naturally occurring and synthetic compounds that could be applied by the residence that also have that same mass ion and for some samples, these naturally occurring compounds are interfering with the proper identification and quantitation of sulfolane. For the sample analysis performed by Pace, in order to differentiate between sulfolane and the interfering compounds, Pace technicians evaluate the secondary and tertiary mass ions that are also characteristic of sulfolane but not of the interference compounds. In the case of sulfolane, these alternate identification/quantitation mass ions are m/z 55 and 56.

In the case of the inordinately high level of sulfolane in one of the recent cauliflower samples, the reported concentration was derived from a peak area for m/z 120; however, the significantly lower presence of the secondary and tertiary mass ions shows that the concentration of sulfolane in one of the recent cauliflower sample, is likely to be attributed to interference from another compound. Further analysis of the ratios of the primary, secondary, and tertiary signatures of sulfolane yielded an adjusted sulfolane concentration of about 17 ppb in the cauliflower sample.

Mr. Vitale stated that it might be valuable to try to identify the interfering compound and asked Ms. Ha to provide him with a copy of the checklist information from the Garden Study participants listing any fertilizers, pesticides, fungicides, or other application that they used while growing their vegetables.

ACTION ITEM: *Ms. Ha will provide Mr. Vitale with a copy of the checklist information from Garden Study participants listing any fertilizers, pesticides, fungicides, etc. that they used while growing their vegetables.*

The team continued discussing the issue of naturally occurring and synthetic compounds that could interfere with the sulfolane analytical process. Mr. Vitale commented that the level of interference differs from plant to plant and between field samples and store bought plants. He added that the

chemical(s) causing the interference seemed to be located on the outside of the plant and that it might be possible to remove the interfering compounds by thoroughly washing the samples. Dr. Verbrugge commented that DHSS's Chief Chemist at the Alaska State Public Health Laboratory, Mr. Dave Verbrugge had some questions for Ms. Michell concerning the analytical process and would follow-up in the near future.

ACTION ITEM: *Dave Verbrugge, Chief Chemist, Alaska State Public Health Laboratory, will contact Ms. Michell to discuss questions concerning the laboratory processes used by Pace and validated by Environmental Standards Inc. in their analysis of the sulfolane concentrations of Garden Study vegetables.*

The team continued its discussion of interference in the analytical process. Mr. Vitale emphasized that the aforementioned explanation was only a highly probable explanation for the inordinately high levels of sulfolane reported in the cauliflower sample, and added that an estimated maximum concentration of sulfolane in cauliflower would not be above 20 ppb, but he also stated that Pace would need to perform the quantitation using the secondary mass ion and formally report the revised result. Ms. Farris suggested that the team establish a chemistry subgroup to independently review the validation process for project lab results before they are released to the public. The team briefly discussed the suggestion and agreed that the subgroup should be established soon so that it could review the validated results of the Garden Study before they are made public.

ACTION ITEM: *the TPT will establish a chemistry subgroup and determine its membership composition. Ms Farris will initiate the organization of the sub group*.

ACTION ITEM: *The chemistry subgroup will discuss the results of the Garden Study before they are released to the public. Ms. Farris will relay the results of their consultation to the team and to the Risk Communication Subgroup.*

Dr. Verbrugge remarked that the recent results of the Garden Study will complicate her department's public health message points since some samples contained sulfolane concentrations that exceeded the screening levels derived for an infant. Ms. Farris added that, while the discussion with individual gardeners may be more complicated, for the investigation and cleanup being done by Flint Hills, the data indicates the uptake of sulfolane into plants is occurring and could pose an unacceptable risk to the community, therefore the pathway should be cut off by providing a clean water source for gardening, in addition to drinking water, or groundwater must be actively treated.

Ms. Ha related a question from Garden Study participants concerning whether they should sample frost damaged plants. The team briefly discussed the question and decided that even frost damaged plants should be sampled since frost damage is not expected to affect the sulfolane concentration in the samples.

Ms. Ha said that one of the Garden Study participants expressed concern over whether it is safe to eat the eggs and meat of chickens and ducks that she raised with grass that had been watered with contaminated well water. The team discussed the concern and the technical feasibility of sampling

sulfolane in eggs and meat. Mr. Vitale remarked that from an analytical perspective eggs and meat are difficult and complex matrices and it would be relatively difficult to analyze them. Ms. Farris remarked that since the literature does not rule out these exposure points, it would be impossible to answer the question without analyzing each pathway. The team agreed that since it could sample numerous pathways, it would probably be most prudent to answer the question from the regulatory standpoint and inform the gardener that sulfolane has been shown to be taken up by some plants and at this point it is not known whether it is present in grass, eggs, or meat.

The team took up discussion of the results of recent drinking water testing and revisited the discussion of isotope dilution technique for quantitating sulfolane Ms. Ha reminded the team that the initial testing round of well water sampling conducted by SGS using EPA method 8270 without using the isotope dilution technique yielded concentrations of sulfolane that were roughly a third lower than those of the second round of sampling conducted by Pace Labs using EPA method 8270 isotope dilution technique. She reiterated that residents are concerned about this discrepancy since it initially gave them the impression that the concentration of sulfolane in their water is increasing.

Mr. Vitale asserted that the only difference between the analysis is that the internal standard is added before the sulfolane is extracted in the isotope dilution technique that is used by Pace so that it accounts for analyte losses during transfers between glass, etc. throughout the process. He said the process has a correction factor of about 30 percent. Since SGS is reporting a 70 percent recovery for the sulfolane LCS and Pace reporting a 102 percent recovery the sulfolane LCS, the differences in recoveries between the two sulfolane quantitation processes loosely corresponds to the observed differences in sulfolane concentrations in the select sample set.

Mr. Coggeshall stated that FHR had decided to use the more conservative isotope dilution technique for sampling events related to risk-based decision making, but they would have to make very thorough considerations regarding whether to switch to that method to analyze samples taken from monitoring wells. He added that all of the wells in which sulfolane was not detected would be retested using the isotope dilution technique. He questioned whether the difference in results was a risk concern since everyone with sulfolane detection is currently being provided with clean water. He commented that transitioning to the isotope dilution technique for trend monitoring would create a disconnect between older data that was generated using the internal standard technique. He added that he was not sure whether this disconnect could be adequately addressed through backside calculations.

The team continued its deliberation over the two analytical techniques. Dr. Verbrugge asserted that, from a health perspective, she is concerned about the true concentration of sulfolane in the drinking wells. Ms. Farris remarked that the decision of whether to use the isotope dilution technique to analyze monitoring well samples may prove significant if there is a possibility that it may yield results that would change the outcome of recent trend analysis on those wells. She said that the team should adopt the method that gives them the most confidence in the data and the most accurate representation of the concentration in the drinking water. The team agreed to continue discussing the decision after the TPT meeting and ask the chemistry subgroup to independently review the isotope dilution technique to the existing method and make a recommendation to the TPT. Ms. Farris remarked that following their

review, ADEC would make a decision regarding the sulfolane quantitation method which would be memorialized in writing.

The team took up discussion of soil sampling. Ms. Farris informed the team that the DEC has a guidance level for soil contamination and that soil should be sampled to ensure that people are not creating a contaminated site by watering their lawns or gardens with contaminated well water. The team agreed that the soil sampling would be conducted to answer a twofold question; first, to determine whether sulfolane adheres to soil, and second to determine whether it remains in the pore water that is taken up by plants. The team agreed that soil sampling efforts scheduled for the following day should be postponed in order to engage the chemistry subgroup to define objectives that would be included into a SAP with protocols for testing procedures based on the sampling objectives. The team agreed that the soil samples should be well homogenized if it is not possible to gather them from the same soil horizon, and that the sampling schedule reflect consideration of the time of day, possible seasonal influence on microbial activity, and the amount of time since the soil was last watered.

ACTION ITEM: Ms. Farris will engage the chemistry sub-group to assist with defining objectives for the soil sampling; Mr. Coggeshall will provide Ms. Michell with a copy of the Site Characterization Work Plan (SCAP) SAP so that she can determine if the SAP's protocols support the sampling objectives

SUMP and DRAIN SYSTEMS

Mr. Coggeshall briefly updated the team on the status of the investigation of the sump and drain system at the North Pole refinery. He said that FHR recently completed a methodical review of the system and is currently in the process of taking some components out of service while repairing and upgrading others. He added that FHR is still performing investigative sampling in the down gradient area of the lab building since they are not able to sample the area underneath the building. He emphasized that the lab's former drainage system would be permanently retired with FHR considering replacement with a system that is placed below grade in such a way that it can be physically inspected and guarded by the secondary containment system. Mr. Coggeshall informed the team that FHR was preparing a Lab Area Groundwater Screening Investigation Sampling and Analysis Plan for ADEC's review
ACTION ITEM: Mr. Coggeshall will coordinate the submittal of the Lab Area Groundwater Screening Investigation Sampling and Analysis Plan for ADEC review and approval.

THE GREENHOUSE STUDY

The team transitioned its discussion to the topic of the Greenhouse Study. Ms. Farris informed the team that she would solicit a contract to develop the project's scope of work sometime at the end of the week after she had received approval from the department. The goal being to provide the team with a better sense of whether to pursue the study after the scope of work and cost estimate had been finalized. Dr. Verbrugge remarked that the team should discuss and clarify the objectives of the Greenhouse Study as they pertain to the project's risk assessment and regulatory requirements. Ms. Farris specified that from a regulatory standpoint, cleaning the aquifer to the drinking water standard may not sufficiently address the gardening pathway given the dearth of knowledge about sulfolane uptake in plants and its potential cumulative effects on human health. She remarked that if the team decides to forgo the Greenhouse Study, ADEC may have to reconsider how it will regulate the aquifer.

She emphasized that to complete a risk assessment of the site, the gardening pathway must be better understood.

The team discussed possible alternatives to the Greenhouse Study. Mr. Butler suggested that project resources might be better devoted to studies designed to determine the effects of sulfolane on human health. Dr. Verbrugge said that she felt that the validation methods used in the Garden Study were inadequate and the Greenhouse study should incorporate radioactive tracing methods to ensure that sulfolane was being fully extracted from plants during the analytical process. She added that she did not feel that the Garden Study addressed the potential worst case scenario for sulfolane uptake in garden produce. Ms. Farris remarked that the ADEC would have to conduct internal discussions to determine its position on the Greenhouse study.

ACTION ITEM: *Ms. Farris will inform the team members of the outcome of ADEC's internal discussions concerning its approach to the drinking water and produce pathways, and consequently, its position on whether to pursue the Greenhouse Study.*

THE DRINKING WATER SUBGROUP

The team reviewed the results of the ongoing sampling of North Pole city wells, the progress on determining the location of the new wells, updates on the proposed distribution system extension, and the development of the in-home treatment system. Mr. Coggeshall informed that team that that as of August 27th, FHR has visited 776 locations and sampled 412 wells. He said that 126 showed concentrations of sulfolane higher than 25 ppb, 64 showed concentrations between 10 and 25 ppb, and 218 of the sampled wells showed a concentration of less than 10 ppb. He added that FHR is still waiting on the results from two wells. He related that FHR is currently providing bottled water at 320 locations and has connected city water at 29 locations. He said that FHR has set up seven bulk water tanks and is currently pilot-testing five water treatment systems.

Mr. Coggeshall presented an overview of the in-home treatment. He said that FHR is currently pilot testing a system design and once proven in the pilot testing stage, expects that the in-home treatment system will provide an effective and desirable long-term solution for residents living outside the city limits. He commented that FHR's goal in designing the system is to create an alternative that is robust, effective, and does not require effort on behalf of the homeowner to operate. Mr. Coggeshall gave a brief description of the system operation and components and added that FHR would pay for the system as well costs associated with its installation and maintenance. Mr. Coggeshall said that each system will have a capacity of 5 to 6 gallons per minute which should be amply sufficient for residents including vegetable garden watering. He added that FHR intends to service each system two to three times a year and to provide routine water sampling at least once a year to ensure that the systems are functioning properly. He said that FHR will place a "24-hour call" sticker on each until so that owners may call for rapid assistance in the event of a system malfunction.

Ms. Coggeshall explained that FHR intends to install in-home treatment systems after it completes its pilot testing and obtains ADEC's approval of the system. He said that FHR hopes to complete pilot testing by the end of the year and begin installing the treatment systems following the pilot testing. The

priority of the installations would generally be the most highly contaminated wells first with the remainder of the wells completed throughout a 12 – 18 month period. He said that the residents would likely own the unit and FHR would have agreements for access with each homeowner.

The team discussed concerns about how residents would know if the system was not working properly and who would pay for the additional heating and electricity required to operate the system. Mr. Coggeshall informed the team that the system would be equipped with warning equipment in the event of a malfunction. He said that each unit would be tested when it was installed and each time the unit was serviced by technicians. He remarked that FHR had not yet decided how to address any additional heating and electrical expenses that may be associated with the operation of the unit.

THE NEW MUNICIPAL WELL

Mr. Coggeshall presented a brief overview of the schedule for the development of the new North Pole municipal well. He said that FHR began drilling the new wells on August 26th and expected to finish sometime in late September or early October. He said that FHR began constructing the well house on August 16th and tentatively planned to complete its construction sometime in the late fall of 2010. He remarked that FHR now has a good characterization of the whole area and they are currently trying to determine the optimum depth for the well. Mr. Coggeshall indicated that most of the raw water main is also now complete.

Ms. Ha remarked that one of the gardeners told her there were strong feelings in the community regarding the costs of their connection to city water. She added that FHR should know they may receive questions concerning this matter at the upcoming Open House meeting. Mr. Butler explained that the city conducted the hookups in different ways on different subdivisions and consequently residents of the Ford Subdivision were connected at the city's expense while some residents of the Subdivision had to pay for their connection.

THE SCWP/IRAP

Ms. Page presented an overview of the current status of the Site Characterization Work Plan (SCWP) and the Interim Remedial Action Plan (IRAP). She said that FHR is currently revising both documents per ADEC's comments and expects to submit them by September 20th. She added that her plans in the revision letter will be made in response to each of ADEC's comments and they will contain references to the pertinent material in each of the documents. She said that the documents will be shipped to her the following day and she should have them to ADEC by Friday.

Ms. Page informed the team that FHR had decided to install wells in addition to those that it had specified in the work plan. She said that FHR now intends to add 38 additional wells, 21 of which will be located on-site and 17 of which will be located off-site. The team discussed the drilling schedule for the additional wells. Ms. Page said that Shannon & Wilson will have an updated schedule for the drilling by tomorrow.

Ms. Page presented slides of the poster boards that FHR intended to display at the upcoming TPT meeting. She said that they intended to present a map of the plume area complete with a description of areas where well sampling data indicated potentially increasing, decreasing, and stable trends, as well as areas where there was not a sufficient number of data points for this type of analysis. Ms. Farris suggested that FHR include information on their maps indicating where they will be drilling the proposed new wells. She added that it might be useful to indicate something about the monthly sampling program.

ACTION ITEM: Per Ms. Farris's request, FHR will add to the plume map locations that are currently considered to be historic potential source areas including the sulfolane extraction unit, Lagoon B, the rail rack, and the former bolted tanks.

Ms. Erben asked whether it would be possible to include a graph of the monthly sampling results for each well in the poster board displays for the Open House. The team considered the suggestion and decided that the statistical analysis of groundwater data is too complex to be demonstrated in that form. Environmental data in general does not follow a linier pattern due to fluctuations and other heterogeneities, therefore nonlinear statistical packages are used to look for increasing or decreasing trends and these are not easily shown on a graph.

Ms. Page continued her presentation on the installation of new wells. She said that FHR intends to install 8 new on-site water table wells and 5 new off-site water table wells. She said that they will install additional wells beyond those mentioned in the work plan to address data gaps which FHR feels are necessary to complete the delineation of the contaminated area. She said that all of the wells will be installed in accordance with the procedures outlined in the work plan. Each well will be screened at the bottom 5 to 10 feet and drilled to their specified depth, or to the depth of the permafrost, whichever is encountered first.

The team discussed various aspects of the presentation. Ms. Farris asked whether FHR had found any patterns in the depth of the permafrost. Ms. Page replied that, thus far, the permafrost depth has been erratic. Ms. Farris pointed out that there seems to be a gap in the forested area just north of well 142. Mr. Coggeshall responded that, that area is heavily forested and may not be practical to access. He remarked that it may be possible to place wells in that area, but at this point the placement of any additional wells should be thoroughly considered. Ms. Farris suggested that, at this point, there is nothing in the area to explain the increasing trend in well 142. She added that she is particularly concerned about the area given the increasing trend of 142 and since its location is beyond the range of the primary recovery area of the remediation system. She observed that the area is relatively close to the rail-car loading area and suggested that the cause may have been historical. She asked Mr. Coggeshall if he had any idea why well 142 is showing an increasing trend. Mr. Coggeshall replied that concentration trends at well 142 may be related to historical water level changes or potentially residual soil impacts. Ms. Farris replied that it may be appropriate to perform some soil sampling in the area. She commented that, ultimately, ADEC must know what is going on in that area.

ACTION ITEM: FHR will discuss further with Ms. Farris the need for adding a monitoring well to close a potential data gap in the forested area in the vicinity of well MW-142.

Ms. Page informed the team the FHR intends to conduct geophysical studies of the area in order to gain a better understanding of its lithology. She explained that they recently reviewed a study of the area which revealed some of the preferential flow channels in the northern half of the plume area. Ms. Page said that FHR intends to use ground penetrating radar to determine the distribution of alluvial deposits in the area in order to determine the preferential flow channels in the southern half of the plume. She added that they would attempt to look at the area around several residential wells within the plume that had reportedly been installed through permafrost to help determine the dynamics in these areas.

Ms. Page told the team that FHR hoped to present the work plan for the radar project for ADEC approval by end of the month. She said they want to start the project sometime between the end of the month and the middle of October. She said that FHR expected the project to take about a week to complete. She commented that Arcadis has been hired to conduct the project. She added that FHR would discuss information gathered from the project at the TPT meetings and in the SCWP, and that, hopefully this project would help them refine their model of the contaminated area.

The team took up discussion of the radar project. Ms. Page informed the team that the ground penetrating radar would be driven along roads within the plume area. She reiterated that the primary objective of the project is to delineate the lithology of the area and that the investigation of the residential wells was considered a secondary goal. Ms. Farris expressed concern over the potential for radar interference. Ms. Page replied that she felt that Arcadis had enough experience to interpret the high conductivity areas. The team agreed that information about the project should be presented in the upcoming Open House meeting, if it was available.

Ms. Page presented an overview of the site's recovery system and the 2010 IRAP activities. She described the route of the recovery well's plumbing system and the new carbon filtration system. She commented that FHR intends to clean and replace the piping from R-21 and other areas where piping sizes are mismatched. She added that FHR intends to add heat trace and upgrade the glycol system at the new wells and it will add the carbon unit and pre-filter to the coalescer. She said that FHR is currently working on its wastewater disposal permit.

The team discussed the timeline for the aforementioned IRAP activities. Mr. Coggeshall remarked that some parts of the IRAP will take longer than others, but FHR's goal is to have the system up and running by the end of the year or first quarter of 2011. Ms. Page informed the team that the installation of the new pumping wells has been delayed since FHR has had to bring in a special drill rig for those wells. She said that they expected to have the pumping wells installed sometime in the middle of October. She remarked that FHR is still refining some of the engineering designs for these systems, but it is not waiting to install others.

Ms. Farris suggested that FHR attempt to communicate the difference between the product recovery system and the groundwater treatment systems during the upcoming Open House meeting.

She also stated that ADEC will have to make an additional round of decisions before the IRAP is moved to the final plan. She noted that the team probably did not have time to consider the monthly groundwater reports in the meeting and suggested that the she discuss monthly groundwater reports with Mr. Coggeshall and Ms. Page offline after the meeting.

ACTION ITEM: FHR representatives will contact Ms. Farris to further discuss streamlining the monthly groundwater reports process.

OPEN HOUSE DETAILS

The team took up discussion on the upcoming Open House meeting. The team agreed to place copies of the poster boards presented during the upcoming Open House on the Internet. The team discussed whether it is possible to determine the number of hits ADEC receives on its project website.

ACTION ITEM: Ms. Erben will inquire as to the possibility of recording the number of hits that have been received by ADEC's project website

Ms. Grady informed the team that there would probably be another risk communication meeting before the October 5th Open House meeting and the team could then discuss how it would coordinate its talking and message points. Mr. Coggeshall suggested that members of the Tox Subgroup send their message points to the Risk Communication Subgroup so that can be further refined.

ACTION ITEM: FHR will provide Ms. Erben with electronic copies of the poster boards and other information it presents during the Open House meeting so that she can place them on ADEC's website.

FUTURE MEETINGS

The team discussed the agenda for the upcoming November 3rd TPT meeting. The team agreed the agenda should include an update on the in-home treatment system design and testing. The team continued its discussion and decided that the agenda should also include, the Lab Area Groundwater Screening Investigation Sampling and Analysis Plan, an update on the IRAP/SCWP activities, and a presentation by the EPA on the CERCLA site assessment.

Ms. Page asked that the draft agenda be presented to the team in time to allow for adequate preparation of meeting presentations. Ms. Grady said she would make her best effort to get the draft agenda out to the team in time for presentations to be crafted.

The team concluded the meeting with a discussion of future TPT meetings. The team tentatively scheduled upcoming meetings on December 14th, 2010, and January 19th, 2011.

The meeting adjourned at 5:20 pm, Alaska Time.